

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

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REC'D 21 JUL 2005

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:
BORDEN LADNER GERVAIS LLP
World Exchange Plaza
1100 - 100 Queen Street
OTTAWA, Ontario
Canada, K1P 1J9

29/9

Date of mailing (day/month/year) **14 July 2005 (14-07-2005)**

Applicant's or agent's file reference
PAT2796W-90

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/CA2005/000438

International filing date (day/month/year)
23 March 2005 (23-03-2005)

Priority date (day/month/year)
23 March 2004 (23-03-2004)

International Patent Classification (IPC) or both national classification and IPC
IPC(7) G01R-31/06, G01M-15/00, G06F-17/10

Applicant
THE UNIVERSITY OF BRITISH COLUMBIA ET AL

1. This opinion contains indications relating to the following items :

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
Place du Portage I, C114 - 1st Floor, Box PCT
50 Victoria Street
Gatineau, Quebec K1A 0C9
Facsimile No.: 001(819)953-2476

Date of completion of this opinion
13 May 2005 (13-05-2005)

Authorized officer

David E. Green (819) 994-8213

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CA2005/000438

Box No. 1

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of :

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ on paper

☐ in electronic form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in electronic form

☐ furnished subsequently to this Authority for the purposes of search.

3 ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statement that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments :

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CA2005/000438

Box No. V **Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims <u>1-35</u>	YES
	Claims <u>none</u>	NO
Inventive step (IS)	Claims <u>1-35</u>	YES
	Claims <u>none</u>	NO
Industrial applicability (IA)	Claims <u>1-35</u>	YES
	Claims <u>none</u>	NO

2. Citations and explanations :

The closest prior art is D1 US4857856 1989-08-15 G01R-31/06 Coleman et al. D1 discloses on site testing for slackening of transformer windings, by monitoring modulation of high-frequency signal injected into a conductor while a supply frequency signal is flowing in the conductor.

1. Novelty

None of the cited documents discloses a diagnostic device for generating a characteristic impedance for an electrical winding having an input terminal and an output terminal, which uses a processing means for calculating this impedance based on a transmission line model of the electrical winding, as recited in independent claim 1, or a corresponding method as recited in independent claims 18 and 29. As such, these claims and all their dependent claims are considered to be novel, in accordance with PCT Art.33(2).

2. Inventive Step

There is nothing in any of the cited art that would lead one skilled in the art to the features as recited in independent claims 1, 18 and 29, and as such, these claims, and all their dependent claims, are considered to involve an inventive step, in accordance with PCT. Art. 33(3).

3. Industrial Applicability

The subject matter of all claims 1-35 clearly has industrial applicability, in accordance with PCT. Art. 33(4).

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/CA2005/000438

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted :

In accordance with PCT Rules 5(a) and 5(b), the brief description of the drawings (currently on page 10) should be placed prior to the detailed descriptions of the figures, which seem to begin on page 2.

In accordance with PCT Rule 10.2, the reference signs must be consistent throughout the application. On pages 13-14 and in figures 5 and 6, there seems to be some conflict with the subscripts in the terms E_{kh} and E_{mh} , in that they are shown as E_{kk} and E_{mk} in the figures.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/CA2005/000438

Box No. VIII **Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made :

Claims 11 and 12 are not in accordance with PCT Rule 6.2, in that they rely on explicit references to figures 6 and 8.

Claims 11 and 12 are not in accordance with PCT Art. 6. These claims should clearly define all of the terms used in the recited equations.

Claims 4, 21 and 24 are not in accordance with PCT Art. 6. The use of the phrase "at least about" is considered to be unclear, in that it implies that some undefined values outside of the specified range are intended to be covered, without specifying what those values are.

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Box No. 1 **Basis of this opinion**

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a. type of material

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b. format of material

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4. Additional comments :

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>1-35</u>	YES
	Claims <u>none</u>	NO
Inventive step (IS)	Claims <u>1-35</u>	YES
	Claims <u>none</u>	NO
Industrial applicability (IA)	Claims <u>1-35</u>	YES
	Claims <u>none</u>	NO

2. Citations and explanations :

The closest prior art is D1 US4857856 1989-08-15 G01R-31/06 Coleman et al. D1 discloses on site testing for slackening of transformer windings, by monitoring modulation of high-frequency signal injected into a conductor while a supply frequency signal is flowing in the conductor.

1. Novelty

None of the cited documents discloses a diagnostic device for generating a characteristic impedance for an electrical winding having an input terminal and an output terminal, which uses a processing means for calculating this impedance based on a transmission line model of the electrical winding, as recited in independent claim 1, or a corresponding method as recited in independent claims 18 and 29. As such, these claims and all their dependent claims are considered to be novel, in accordance with PCT Art.33(2).

2. Inventive Step

There is nothing in any of the cited art that would lead one skilled in the art to the features as recited in independent claims 1, 18 and 29, and as such, these claims, and all their dependent claims, are considered to involve an inventive step, in accordance with PCT. Art. 33(3).

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